Listing Of Claims

1. (currently amended) A method for packaging a semiconductor die comprising:

providing a leadframe;

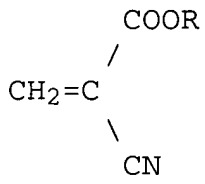
providing a cyanoacrylate adhesive material formulated to cure ~~in contact with the die~~ in less than about 60 seconds in a temperature of about 20°C to 30°C and an ambient atmosphere;

applying the adhesive material in viscous form to the leadframe or to the die;

placing the die on the leadframe with the adhesive material in contact with the die and the leadframe to form an adhesive layer therebetween; and

polymerizing from 90-100% of the adhesive material in the temperature and the ambient atmosphere in less than about 60 seconds to cure the adhesive layer and bond the die to the leadframe.

2. (previously presented) The method of claim 1 wherein the adhesive material has the formula:



wherein R comprises a hydrocarbon group.

3. (previously presented) The method of claim 1 further comprising applying a catalyst to the leadframe, to the die, or to the adhesive material prior to the curing step.

4. (previously presented) The method of claim 1 wherein the leadframe comprises a lead-on-chip leadframe.

5. (previously presented) The method of claim 1 further comprising providing a filler in the adhesive material.

6. (currently amended) A method for packaging a semiconductor die comprising:

providing a leadframe comprising a plurality of lead fingers;

providing a cyanoacrylate adhesive material formulated to cure ~~in contact with the die~~ in less than about 60 seconds at a temperature of about 20°C to 30°C and in an ambient atmosphere;

applying the adhesive material in viscous form to the lead fingers or to the die;

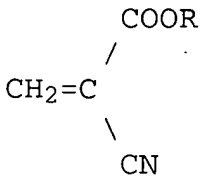
placing the die on the lead fingers with the adhesive material compressed between the die and the lead fingers to form an adhesive layer therebetween;

polymerizing from 90% to 100% of the adhesive material at the temperature and in the ambient atmosphere in less than about 60 seconds to cure the adhesive layer and bond the die to the lead fingers;

wire bonding the die to the lead fingers; and

encapsulating the die.

7. (previously presented) The method of claim 6 wherein the adhesive material has the formula:



wherein R comprises a hydrocarbon group.

8. (previously presented) The method of claim 6 wherein the applying step comprises a method selected from the group consisting of syringe dispensing, stenciling, dip coating, spraying, and dot shooting.

9. (currently amended) The method of claim 6 wherein the applying step comprises forming a plurality of dots of the adhesive material on the lead fingers. ~~leadframe.~~

10. (previously presented) The method of claim 6 wherein the adhesive material includes an electrically conductive filler comprising a material selected from the group consisting of Ag, Ni and Fe.

11. (previously presented) The method of claim 6 further comprising applying a catalyst to the leadframe, to the die, or to the adhesive material prior to the curing step.

12. (currently amended) A method for packaging a semiconductor die comprising:

providing a leadframe comprising a plurality of lead fingers;

applying an adhesive material in viscous form on the lead fingers or on the die, the adhesive material comprising a cyanoacrylate adhesive formulated to cure ~~in contact with the die~~ in less than about 60 seconds at a temperature of about 20°C to 30°C and in an ambient atmosphere, and an electrically insulating filler configured to reduce cross talk between the lead fingers;

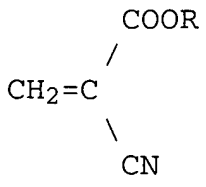
placing the die on the lead fingers with the adhesive material in contact with the die and the lead fingers to form an adhesive layer therebetween; and

polymerizing from 90-100% of the adhesive material at the temperature and in the ambient atmosphere in less than

about 60 seconds to cure the adhesive layer and bond the die to the lead fingers.

13. (previously presented) The method of claim 12 further comprising applying a catalyst to the lead fingers, to the die or to the adhesive material prior to the curing step.

14. (previously presented) The method of claim 12 wherein the adhesive material has the formula:

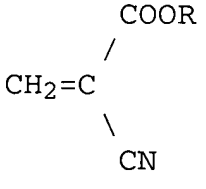


wherein R comprises a hydrocarbon group.

15. (currently amended) A method for packaging a semiconductor die comprising:

providing a leadframe;

providing an adhesive material having the formula:



wherein R is a hydrocarbon group, the adhesive material formulated to cure in less than about 60 seconds ~~in contact with the die~~ at a temperature of about 20°C to 30°C and in an ambient atmosphere;

providing a filler in the adhesive material selected to tailor a characteristic of the adhesive material;

applying the adhesive material in a viscous form to the leadframe or to the die;

placing the die on the leadframe with the adhesive material compressed between the die and the leadframe to form an adhesive layer therebetween;

polymerizing from 90-100% of the adhesive material at the temperature and in the ambient atmosphere in less than about 60 seconds to cure the adhesive layer and bond the die to the leadframe;

wire bonding the die to the lead frame; and

encapsulating the die.

16. (previously presented) The method of claim 15 further comprising following the applying step, applying a catalyst to the leadframe or to the die.

17. (previously presented) The method of claim 15 wherein the filler comprises a material selected from the group consisting of SiO_2, Al_2O_3, AlN, Ag, Ni, Fe, SiC, and polystyrene coated Ni.

18. (previously presented) The method of claim 15 wherein the leadframe comprises a mounting paddle for supporting the die.

19. (previously presented) The method of claim 15 wherein the leadframe comprises a lead-on-chip leadframe comprising a plurality of lead fingers configured for wire bonding to the die and for supporting the die.

20. (previously presented) The method of claim 15 wherein the applying step comprises a method selected from the group consisting of syringe dispensing, stenciling, dip coating, spraying, and dot shooting.

21. (currently amended) A method for packaging a semiconductor die comprising:

providing a leadframe;

providing an adhesive material comprising an anaerobic acrylic formulated to cure ~~in contact with the die~~ in less than about 60 seconds at a temperature of about 20°C to 30°C and in an ambient atmosphere;

applying the adhesive material in viscous form to the leadframe or to the die;

placing the die on the leadframe with the adhesive material compressed between the die and the leadframe to form an adhesive layer therebetween; and

polymerizing from 90-100% of the adhesive material at the temperature and in the ambient atmosphere in less than about 60 seconds to cure the adhesive layer and bond the die to the leadframe.

22. (previously presented) The method of claim 21 further comprising accelerating the curing step using ambient humidity on the leadframe or the die.

Claims 23-39 (canceled)

40. (previously presented) The method of claim 21 further comprising applying a catalyst to the leadframe, to the die, or to the adhesive material prior to the curing step.

41. (previously presented) The method of claim 21 wherein the leadframe comprises a lead-on-chip leadframe comprising a plurality of lead fingers configured for wire bonding to the die and for supporting the die.

42. (currently amended) A method for packaging a semiconductor die comprising:

providing a lead-on-chip leadframe comprising a plurality of lead fingers configured to support the die and comprising a plurality of bonding sites;

providing an adhesive material comprising a cyanoacrylate adhesive or an anaerobic acrylic formulated to cure ~~in contact with the die~~ in less than about 60 seconds at a temperature of about 20°C to 30°C and in an ambient atmosphere;

providing a filler in the adhesive material selected to tailor a characteristic of the adhesive material;

applying the adhesive material in viscous form to the die or to the leadframe;

placing the die on the leadframe with the adhesive material in contact with the die and the lead fingers to form an adhesive layer therebetween;

polymerizing from 90-100% of the adhesive material at the temperature and in the ambient atmosphere in less than about 60 seconds to cure the adhesive layer and bond the die to the lead fingers;

wire bonding the die to the bonding sites; and

encapsulating the die and at least portions of the lead fingers.

43. (previously presented) The method of claim 42 wherein the filler comprises an electrically insulating material.

44. (previously presented) The method of claim 42 wherein the filler comprises an electrically conductive material.